

Remarks / Discussion of Issues

In the non-final Office Action dated September 25, 2009, it is noted that claims 1-37 are pending and stand rejected. Claims 1 and 31 are independent claims. The claims have been amended for non-statutory purposes, for example to remove item numbers and to clarify the subject matter of the claimed invention. No new subject matter has been added.

Objections to the Specification

The Applicants thank the Examiner for providing information about recommended section headings. However, the Applicants respectfully decline to add the headings. Section headings are not statutorily required for filing a non-provisional patent application under 35 USC 111(a), but per 37 CFR 1.51(d) are only guidelines that are suggested for applicant's use. (See Miscellaneous Changes in Patent Practice, Response to comments 17 and 18 (Official Gazette, August 13, 1996) [Docket No: 950620162-6014-02] RIN 0651-AA75 ("Section 1.77 is permissive rather than mandatory. ... [T]he Office will not require any application to comply with the format set forth in 1.77").

The disclosure is objected to because of alleged informalities, i.e. paragraph [0027] discloses the superframe structure to be reference item 101 but also discloses the TBTT or BPST to be 101 as well.

The Applicants herein amend paragraph [0027], which is also page 4, lines 26-32 of the specification as originally filed, to clarify this alleged informality. The superframe structure is now reference item 100. As such, the Applicants respectfully request the withdrawal of this objection.

Claim Objections

The Office action objects to claims 1, 14, 31, 4, 8, 13, 14, 22, 24, 25, 34, and 37 because of informalities.

By this response, the Applicants hereby clarify claim 1 to read "a medium access time," remove the reference to "C" in claim 14, clarify claim 31 to state "ad hoc network,"

and clarify the remaining claims that are objected to by incorporating "Distributed Reservation Protocol" to indicate DRP, and as suggested by the Office Action. As such, the Applicants respectfully request the withdrawal of these claim objections.

Rejections under 35 U.S.C. §112, second paragraph

Claim 3 stands rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. The Applicants respectfully traverse this rejection.

By this response, the Applicants hereby amend claim 3 to clarify that protecting further comprises including a first reservation for the BP in the beacon of the device in the at least one neighboring BP. Support for this amendment is found at least at page 8, lines 12-17 of the specification as originally filed. As such, the Applicants respectfully request the withdrawal of this rejection.

Rejections under 35 U.S.C. §103

Claims 1-3, 5-7, 9-11, 21-22, and 26-30 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over US Patent Publication 2003/0169697 to Suzuki et al. (hereinafter referred to as "Suzuki"), in view of US Patent Publication 2003/0214967 to Heberling (hereinafter "Heberling"). Claims 4, 8, 12-20, and 23-25 stand rejected over Suzuki in view of Heberling and further in view of US Patent Publication 2003/0012176 to Kondylis et al. (hereinafter "Kondylis"). Claims 31-33 stand rejected over Suzuki in view of US Patent Publication 2003/0169697 to Kim et al. (hereinafter "Kim"). Claims 34-37 stand rejected over Suzuki in view of Kim and Kondylis. These rejections are respectfully traversed.

In re Wada and Murphy, Appeal 2007-3733, the BPAI stated that:

When determining whether a claim is obvious, an examiner must make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Moreover, as the Supreme Court recently stated, "*there must be some articulated reasoning with some rational underpinning to*

support the legal conclusion of obviousness.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (emphasis added)).

The Applicants’ claim 1 requires the following:

A method for a distributed beaconing period protocol for a device in an ad hoc network of devices, comprising the device performing:

dividing a medium access time into a sequence of at least one contiguous superframe beginning at a Beacon Period Start Time;

partitioning the superframe into a slotted Beaconing Period (BP), having a plurality of contiguous beacon slots, followed by a data transfer period; and

associating with at least one of an existing ad hoc network BP or creating a new ad hoc network BP as the BP of the device. Emphasis added.

The Applicants have considered Suzuki and Heberling in their entirety and respectfully submit that the combination of the references do not adequately support the legal conclusion of obviousness for a rejection to claim 1 under 35 U.S.C. 103(a).

Suzuki relates to, for example, a radio communication system which allows the assigning of resources to another communication terminal under the control of the communication terminal having base station capabilities. (Abstract). The Office action alleges that Suzuki at Figs. 4, 7, and 17 discloses partitioning the superframe into a slotted Beaconing Period having a plurality of contiguous beacon slots, followed by a data transfer period, as required by claim 1. The Applicants respectfully disagree because Suzuki does not disclose such feature.

Figure 4 and paragraphs [0108] through [0116] of Suzuki discloses a TDMA frame wherein the beacon of the parent network is sent from the base station (BS) to each mobile station (MS) A-E. The TDMA frame apparently assigns a beacon from the parent network followed by a period consisting of parent network resources to user A, user B, user C, and followed by a contention period. The MS-A accepts resource requests from daughter network resources MS-D and MS-E, which become slaves of the MS-A. The information about the resource assignment determined by the MS-A is sent to the MS-D and MS-E by the beacon in the downstream signal of the daughter network.

Although Suzuki at Figure 4 discloses a beacon of the parent network which may be adjacent to a beacon of the daughter network, this illustration is completely different from the Applicants' claimed invention because the beacon of the daughter network is included in the resources for MS-A, which is clearly separate from the beacon of the parent network. The resource for user A is separate from the beacon of the parent network. Accordingly, the beacon for the daughter network is separate from the beacon for the parent network. Neither the parent network beacon nor the daughter network beacon of Suzuki is partitioned into a slotted beaconing period. As such, Suzuki at Figure 4 and paragraphs [0108] through [0116] does not disclose or even suggest a slotted Beaconing Period having a plurality of contiguous beacon slots, as set forth in claim 1.

Figure 7 and paragraphs [0130] through [0133] of Suzuki discloses a configuration of a transmission frame wherein a beacon broadcast area 31 is followed by a content access period. However, Suzuki does not disclose or suggest that the beacon broadcast area 31 is partitioned into a slotted beaconing period having a plurality of contiguous beacon slots, as set forth in claim 1. Accordingly, this portion of Suzuki does not disclose or suggest the claimed invention.

Figure 17 and paragraphs [0204] through [0212] of Suzuki discloses an example of an operation sequence for realizing the coexistence of two piconets by avoiding the interference therebetween while forming a parent and daughter relationship. Figure 17 seems to illustrate a parent superframe with a beacon, followed by a contention access period (CAP), a contention free period (CFP), another beacon, a second CAP and CFP, an unassigned guaranteed time slot (GTS), followed by a third beacon, CAP and CFP.

Although Suzuki at figure 17 and paragraphs [0204] through [0212] apparently discloses a superframe having multiple beacons, this is completely different from the Applicants' claimed invention because the beacons of Suzuki are not contiguous beacon slots and furthermore are not partitioned into a slotted beaconing period, as required by claim 1.

Nowhere does Suzuki disclose or even suggest partitioning the superframe into a slotted Beaconing Period BP, having a plurality of contiguous beacon slots, followed by a data transfer period. Heberling does not cure the deficiency of Suzuki with respect to

claim 1. Accordingly, the Applicants respectfully maintain that the rejection of claim 1 under 35 U.S.C. 103(a) over the combination of Suzuki and Heberling is unfounded and should be withdrawn.

Independent claim 31 is different from claim 1. For example, claim 31 is directed toward a distributed beaconing apparatus for an ad hoc network device, while claim 1 is directed toward a method for a distributed beaconing protocol for a device in an ad hoc network of devices. Although different from claim 1, claim 31 includes patentable subject matter similar to claim 1 as explained above.

The Office action uses substantially the same arguments as set forth with regard to claim 1, alleging that claim 31 is rejected under 35 U.S.C. §103 over Suzuki in view of Kim.

The Applicants essentially repeat the above arguments for claim 1 and apply them to claim 31. While Kim may disclose a method for adjusting a beacon period in a wireless communication apparatus, Kim does not cure the deficiency of Suzuki with respect to claim 31. As such, the Applicants respectfully submit that the Office has not presented a prima facie case of obvious and the rejection to independent claim 31 under 35 U.S.C. 103(a), are unfounded. Accordingly, the Applicants respectfully submit that claim 31 is in condition for allowance.

With respect to dependent claims 2-30 and 32-37, the Office action cites additional references as noted above. Each of dependent claims 2-30 and 32-37 depends from an allowable independent base claim and inherits all of the respective features of the independent base claim. The cited references do not cure the deficiencies as noted with respect to the independent claim. Thus, each dependent claim is patentable for at least the same reasons discussed above with respect to its independent base claim, from which it depends, with each dependent claim containing further distinguishing patentable features.

It is respectfully submitted that the rejections to claims 1-37 under 35 U.S.C. § 103(a) have been overcome. Hence, withdrawal of the rejections and early allowance of the claims are respectfully requested.

Conclusion

An earnest effort has been made to be fully responsive to the Examiner's correspondence and advance the prosecution of this case. In view of the foregoing, it is respectfully submitted that all of the claims pending in this patent application are in condition for allowance. Reconsideration and allowance of all pending claims are respectfully solicited.

In the event there are any errors with respect to the fees for this response or any other papers related to this response, the Director is hereby given permission to charge any shortages and credit any overcharges of any fees required for this submission to Deposit Account No. 14-1270.

Respectfully submitted,

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